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| 26294 7590 01/07/2008 TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P. 1300 EAST NINTH STREET, SUITE 1700 CLEVEVLAND, OH 44114 | | | | |
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| HARVEY, JULIANNA NANCY | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/731,942

Applicant(s)

BENZEL ET AL.

Examiner

Julianna N. Harvey

Art Unit

4153

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 25-33 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF-100)
Paper No(s)/Mail Date 12/10/03, 06/23/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Inventorship

The examiner has noticed that the spelling of one of the inventors' names may be incorrect. This application, 10/731,942, has one of the inventors listed as Karl Zimmers. Related application 10/731,964 has an inventor listed as Kari Zimmers. The examiner requests applicant to verify which spelling is the correct one.

Specification

Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. In this application, none of the claims are directed to an apparatus for replacing a damaged spinal disc.

Abstract

The abstract submitted with the application is improper in that it is a restatement of the first claim. It does not provide enough details of the technical disclosure to enable one to understand the nature of applicant's invention and the improvement over the prior art.

Applicant is reminded of the proper content of an abstract of the disclosure. A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the

abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Claim Objections

Claims 31 and 33 are objected to because of the following informalities:

- Claims 31 and 33: "Second portion of the second retaining member" (line 3 in claim 31, lines 2 and 4 in claim 33) implies that there is also a first portion of the second retaining member, but there is no mention of such first portion.

Art Unit: 4153

- Claim 33: "Second opening in the second portion" (lines 3-4) implies that there is also a first opening in that portion, but there is no such mention of such opening. The examiner believes "second portion of the first retaining member" (line 4) should read "second portion of the second retaining member."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "moving the first and second mounting members away from each other" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. The preceding claims do not set forth that the mounting members were "near" each other, which is necessary for them to be moved "away" from each other.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5-9, 11-16, 19-23, and 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Bryan et al. (US 6,156,067).

- Claim 1: Bryan et al. disclose an apparatus for replacing a damaged spinal disc in a spinal column wherein the apparatus comprises: an artificial disc including a resilient core (see supple nuclear central portion "24" of resilient disc body "20" in figure 3) having a first surface (see upper surface of "24" in figure 3) and a second surface (see lower surface of "24" in figure 3), a first retaining member (see support "32" in figure 3) connected to the first surface of the resilient core, and a second retaining member (see support "34" in figure 3) connected to the second surface of the resilient core, the first retaining member having an outer surface (see outer surface "52" in figure 3) engageable with a first vertebra of the spinal column and an inner surface (see inner surface "62" in figure 3) facing the first surface of the resilient core, the second retaining member having an outer surface (see outer surface "54" in figure 3) engageable with the second vertebra of the spinal column and an inner surface (see inner surface "64" in figure 3) facing the second surface of the resilient core; and a first mounting member (see cannulated screw device "82" which comprises screw "92" and screw anchor "102" in figure 3). Based on the structure of that apparatus, it is inherent that a method for replacing a damaged spinal disc between first and second vertebrae of a spinal column would comprise: connecting a first mounting member (see cannulated screw device "82" in figure 3) with the first vertebra of the spinal

column; and moving an artificial disc between the first and second vertebrae and into engagement with the first mounting member (see screw anchor "102" in figure 3) to guide the artificial disc into position between the first and second vertebrae.

- Claim 2: It is further inherent that a method as defined in claim 1 further includes engaging the first mounting member (see screw anchor "102" in figure 3) with a guide (see screw opening in "32" in figure 3) on the first retaining member (see support "32" in figure 3) to guide movement of the first retaining member into position between the first and second vertebrae.
- Claim 5: It is further inherent that a method as defined in claim 1 further includes engaging the first mounting member (see screw "92" in figure 3) with a stop (see tapered portion of screw opening in "32" in figure 3) on the first retaining member (see support "32" in figure 3) to prevent relative movement between the first retaining member and the first mounting member in a first direction (direction along vertical axis).
- Claim 6: It is further inherent that a method as defined in claim 5 further includes guiding movement of the first retaining member (see support "32" in figure 3) relative to the first mounting member (see screw "92" in figure 3) in a second direction extending transverse to the first direction (direction along horizontal axis).
- Claim 7: It is further inherent that a method as defined in claim 1 further includes guiding movement of the first mounting member (see screw "92" in figure 3) into

an opening (see screw opening in "32" in figure 3) in the first retaining member (see support "32" in figure 3).

- Claim 8: It is further inherent that a method as defined in claim 1, specifically the step of connecting the first mounting member (see screw "92" in figure 3) with the first vertebra, includes engaging the first mounting member with a surgical tool for connecting the first mounting member to the first vertebra.
- Claim 9: It is further inherent that a method as defined in claim 8, specifically the step of engaging the first mounting member (see screw "92" in figure 3) with the surgical tool includes extending a portion of the surgical tool into a recess (see slot in head of screw "92" in figure 3) in the first mounting member.
- Claim 11: It is further inherent that a method as defined in claim 1 further includes connecting the artificial disc to the first mounting member (see cannulated screw device "82" in figure 3).
- Claim 12: It is further inherent that a method as defined in claim 1, specifically the step of connecting the artificial disc to the first mounting member (see cannulated screw device "82" in figure 3), includes preventing movement of the first mounting member relative to the artificial disc.
- Claim 13: It is further inherent that a method as defined in claim 12, specifically the step of preventing movement of the first mounting member (see cannulated screw device "82" in figure 3) relative to the artificial disc, includes connecting the artificial disc to the first mounting member with an interference fit (see connection between head of screw "92" and support "32" in figure 3).

- Claim 14: It is further inherent that a method as defined in claim 13, specifically the step of connecting the artificial disc to the first mounting member (see cannulated screw device "82" in figure 3) with an interference fit, includes engaging a frustoconical surface (see surface of screw opening in "32" in figure 3) on the artificial disc with a frustoconical surface (see head of screw "92" in figure 3) on the first mounting member.
- Claim 15: It is further inherent that a method as defined in claim 1 further includes connecting a second mounting member (see cannulated screw device "84" in figure 3) to the second vertebra, said step of moving the artificial disc between the first and second vertebrae includes engaging the second mounting member with the artificial disc to guide movement of the artificial disc into position between the first and second vertebrae.
- Claim 16: It is further inherent that a method as defined in claim 15 further includes engaging the first mounting member (see screw anchor "102" in figure 3) with a guide (see screw opening in "32" in figure 3) on the first retaining member (see support "32" in figure 3) to guide movement of the first retaining member into position between the first and second vertebrae and engaging the second mounting member (see screw anchor "104" in figure 3) with a guide (see screw opening in "34" in figure 3) on the second retaining member (see support "34" in figure 3) to guide movement of the second retaining member into position between the first and second vertebrae.

- Claim 19: It is further inherent that a method as defined in claim 15 further includes engaging the first mounting member (see screw "92" in figure 3) with a first stop (see tapered portion of screw opening in "32" in figure 3) on the first retaining member (see support "32" in figure 3) to prevent relative movement between the first retaining member and the first mounting member in a first direction (direction along vertical axis) and engaging the second mounting member (see screw "94" in figure 3) with a second stop (see tapered portion of screw opening in "34" in figure 3) on the second retaining member (see support "34" in figure 3) to prevent relative movement between the second retaining member and the second mounting member in the first direction.
- Claim 20: It is further inherent that a method as defined in claim 19 further includes guiding movement of the first retaining member (see support "32" in figure 3) relative to the first mounting member (see screw "92" in figure 3) in a direction extending transverse to the first direction (direction along horizontal axis) and guiding movement of the second retaining member (see support "34" in figure 3) relative to the second mounting member (see screw "94" in figure 3) in a direction extending transverse to the first direction.
- Claim 21: It is further inherent that a method as defined in claim 15 further includes guiding movement of the first mounting member (see screw "92" in figure 3) into an opening (see screw opening in "32" in figure 3) in the first retaining member (see support "32" in figure 3) and guiding movement of the second mounting member (see screw "94" in figure 3) into an opening (see screw

opening in "34" in figure 3) in the second retaining member (see support "34" in figure 3).

- Claim 22: It is further inherent that a method as defined in claim 15, specifically the step of connecting the first mounting member (see screw "92" in figure 3) with the first vertebra, includes engaging the first mounting member with a surgical tool for connecting the first mounting member to the first vertebra, and the step of connecting the second mounting member (see screw "94" in figure 3) with the second vertebra includes connecting the second mounting member with the surgical tool for connecting the second mounting member to the second vertebra.
- Claim 23: It is further inherent that a method as defined in claim 22 further includes moving the first (see screw "92" in figure 3) and second (see screw "94" in figure 3) mounting members away from each other to connect the first and second mounting members to the first and second vertebrae.
- Claim 26: It is further inherent that a method as defined in claim 15 further includes connecting the artificial disc to the first (see cannulated screw device "82" in figure 3) and second (see cannulated screw device "84" in figure 3) mounting members.
- Claim 27: It is further inherent that a method as defined in claim 26, specifically the step of connecting the artificial disc to the first (see cannulated screw device "82" in figure 3) and second (see cannulated screw device "84" in figure 3) mounting members, includes preventing movement of the first and second mounting members relative to the artificial disc.

- Claim 28: It is further inherent that a method as defined in claim 27, specifically the step of preventing movement of the first (see cannulated screw device "82" in figure 3) and second (see cannulated screw device "84" in figure 3) mounting members relative to the artificial disc, includes connecting the artificial disc to the first and second mounting members with interference fits (see connection between head of screw "92" and support "32" and connection between head of screw "94" and support "34" in figure 3).
- Claim 29: It is further inherent that a method as defined in claim 28, specifically the step of connecting the artificial disc to the first (see cannulated screw device "82" in figure 3) and second (see cannulated screw device "84" in figure 3) mounting members with interference fits, includes engaging frustoconical surfaces (see surface of screw opening in "32" and surface of screw opening "34" in figure 3) on the artificial disc with frustoconical surfaces (see head of screw "92" and head of screw "94" in figure 3) on the first and second mounting members.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 10, 15, 16, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889) in view of Bryan et al. (US 6,156,067). Harrington teaches an apparatus for replacing a damaged spinal disc in a spinal column wherein the apparatus comprises: an artificial disc including a resilient core (see shock absorbing member "68" in figure 2) having a first surface (see upper surface of "68" in figure 2) and a second surface (see lower surface of "68" in figure 2), a first retaining member (see upper member "32" in figure 2) connected to the first surface of the core, and a second retaining member (see lower member "34" in figure 2) connected to the second surface of the core, the first retaining member having an outer surface (see upper surface "36" in figure 2) engageable with a first vertebra of the spinal column and an inner surface (see lower surface "58" in figure 2) facing the first surface of the core, the second retaining member having an outer surface (see lower surface "40" in figure 2) engageable with the second vertebra of the spinal column and an inner surface (see upper surface "44" in figure 2) facing the second surface of the core. Harrington also teaches the use of mounting members (see screws "64," "66," "47," and "48" in figure 2) and that the inner surfaces (see heads of screws "64," "66," "47," and "48" in figure 2) of the mounting members face and are spaced from the core. Harrington further teaches that each retaining member has two guides (see holes "60" in "32" and unlabeled holes in "34" in figure 2) that extend parallel to each other (see column 2, lines 15-20). However, Harrington fails to teach that the artificial disc is moved into engagement with the first and second mounting members. Bryan et al. teach an apparatus where there are first (see cannulated screw device "82" which

comprises screw "92" and screw anchor "102" in figure 3) and second (see cannulated screw device "84" which comprises screw "94" and screw anchor "104" in figure 3) mounting members. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention, specifically the mounting members, disclosed by Harrington with first and second mounting members of the sort suggested by Bryan et al. as doing so would provide a guide (line up the openings in the upper "32" and lower "34" members of Harrington with the openings in the screw anchors "102" and "104" of Bryan et al.) for implantation of the artificial disc and a secure means to attach the first and second retaining members to the vertebrae.

- Claim 1: It flows from the above device that a method for replacing a damaged spinal disc between first and second vertebrae of a spinal column comprises: connecting a first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with the first vertebra of the spinal column; and moving an artificial disc between the first and second vertebrae and into engagement with the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) to guide the artificial disc into position between the first and second vertebrae.
- Claim 2: It flows from the above device that a method as defined in claim 1 further includes engaging the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with a guide (see screw opening in "32" in figure 2 of Harrington) on the first retaining member (see upper member "32" in figure 2 of Harrington) to guide movement of the first retaining member into position between the first and second vertebrae.

- Claim 4: It flows from the above device that a method as defined in claim 1 further includes engaging the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with first and second guides (see holes "60" in figure 2 of Harrington) extending generally parallel to each other (see column 2, lines 15-20 of Harrington) on the first retaining member to guide movement of the first retaining member into position between the first and second vertebrae.
- Claim 10: It flows from the above device that a method as defined in claim 1 further includes spacing an inner surface (see head of screws "64" and "66" in figure 2 of Harrington) of the first mounting member (see screws "64" and "66" in figure 2 of Harrington) that faces the core from the core.
- Claim 15: It flows from the above device that a method as defined in claim 1 further includes connecting a second mounting member (see screw anchor "104" in figure 3 of Bryan et al.) to the second vertebra, said step of moving the artificial disc between the first and second vertebrae including engaging the second mounting member (see screw anchor "104" in figure 3 of Bryan et al.) with the artificial disc to guide movement of the artificial disc into position between the first and second vertebrae.
- Claim 16: It flows from the above device that a method as defined in claim 1 further includes engaging the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with a guide (see screw opening in "32" in figure 2 of Harrington) on the first retaining member (see upper member "32" in figure 2 of Harrington) to guide movement of the first retaining member into position

between the first and second vertebrae and engaging the second mounting member (see screw anchor "104" in figure 3 of Bryan et al.) with a guide (see screw opening in "34" in figure 2 of Harrington) on the second retaining member (see lower member "34" in figure 2 of Harrington) to guide movement of the second retaining member into position between the first and second vertebrae.

- Claim 18: It flows from the above device that a method as defined in claim 15 further includes engaging the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with first and second guides (see holes "60" in figure 2 of Harrington) extending generally parallel to each other (see column 2, lines 15-20 of Harrington) on the first retaining member to guide movement of the first retaining member into position between the first and second vertebrae, and engaging the second mounting member (see screw anchor "104" in figure 3 of Bryan et al.) with third and fourth guides (see unlabeled holes in "34" in figure 2 of Harrington) extending generally parallel to each other (see column 2, lines 15-20 of Harrington) on the second retaining member to guide movement of the second retaining member into position between the first and second vertebrae.
- Claim 25: It flows from the above device that a method as defined in claim 15 further includes spacing an inner surface (see head of screws "64" and "66" in figure 2 of Harrington) of the first mounting member (see screws "64" and "66" in Harrington) that faces the core from the core and spacing an inner surface (see head of screws "47" and "48" in figure 2 of Harrington) of the second mounting

member (see screws "47" and "48" in figure 2 of Harrington) that faces the core from the core.

As previously indicated, claims 1, 2, 4, 10, 15, 16, 18 and 25 are rejected as being unpatentable over Harrington (US 5,893,889) in view of Bryan et al. (US 6,156,067).

Claims 3 and 17 are rejected as being unpatentable over Harrington (US 5,893,889) in view of Bryan et al. (US 6,156,067) further in view of Lego® blocks (<http://web.archive.org/web/20000510061922/http://lego.com>); hereinafter referred to as "Lego") and von Hoffman et al. (US 20020143333 A1). Harrington and Bryan et al. fail to teach that the guides extend from the outer surfaces of the retaining members.

Lego manufactures and sells blocks where each block (see blocks in Figure A) is designed such that the upper surface has male portions (see "1" in Figure A) that guide its fit into female portions (see "2" in Figure A) located on the lower surface of another block. von Hoffman et al. teach a screw device where a

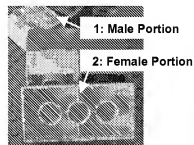


Figure A: Lego Blocks

screw extends through an anchor housing (see housing "38" in figure 1) comprising a hollow tubular portion and a flange (see flange "44" in figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Harrington and Bryan et al. device with protrusions, similar to the male portions of Lego blocks, extending from the outer surfaces of the retaining members (see upper "32" and lower "34" members in figure 2 of Harrington) adapted to fit with the screw anchors (see screw anchors "102" and "104" in figure 3 of Bryan et al.) and designed similar to the anchor housing (hollow and threaded) taught by von Hoffman et al. as

such protrusions would provide a better guide for insertion of the artificial disc (the surgeon would no longer need to visualize the insertion) and would more stably secure the artificial disc to the screw anchors and thus to the vertebrae.

- Claim 3: It flows from the above device that a method as defined in claim 2, specifically the step of engaging the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with the guide (see Lego and housing "38" in figure 1 of von Hoffman et al.) on the first retaining member (see upper member "32" in figure 2 of Harrington), includes engaging the first mounting member with a guide extending from the outer surface of the first retaining member and engaging the first vertebra with the guide.
- Claim 17: It flows from the above device that a method as defined in claim 16, specifically the step of engaging the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) with the first guide (see Lego and housing "38" in figure 1 of von Hoffman et al.) on the first retaining member (see upper member "32" in figure 2 of Harrington), includes engaging the first mounting member with a guide extending from the outer surface of the first retaining member and engaging the first vertebra with the first guide, and the step of engaging the second mounting member (see screw anchor "104" in figure 3 of Bryan et al.) with the second guide (see Lego and housing "38" in figure 1 of von Hoffman et al.) on the second retaining member (see lower member "34" in figure 2 of Harrington), includes engaging the second mounting member with the second

guide extending from the outer surface of the second retaining member and engaging the second vertebra with the second guide.

As previously indicated, claims 3 and 17 are unpatentable over Harrington (US 5,893,889) in view of Bryan et al. (US 6,156,067) further in view of Lego blocks and von Hoffman et al. (US 2002014333 A1).

Claims 1 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Büttner-Janz et al. (US 5,401,269) in view of Bryan et al. (US 6,156,067) further in view of Marnay (US 5,314,477). Büttner-Janz et al. teach an apparatus for replacing a damaged spinal disc in a spinal column wherein the apparatus comprises: an artificial disc including a core (see prosthesis core "3" in figures 1-4) having a first surface (see top surface of "3" in figures 1-4) and a second surface (see bottom surface of "3" in figures 1-4), a first retaining member (see top plate "2" in figures 1-4) connected to the first surface of the core, and a second retaining member (see bottom plate "1" in figures 1-4) connected to the second surface of the core, the first retaining member having an outer surface (see top surface "4" in figures 1-4) engageable with a first vertebra of the spinal column and an inner surface (see bottom surface of "2" in figures 1-4) facing the first surface of the core, the second retaining member having an outer surface (see bottom surface of "1" in figures 1-4) engageable with the second vertebra of the spinal column and an inner surface (see top surface of "1" in figures 1-4) facing the second surface of the core. Concerning the apparatus as disclosed in claim 1, Büttner-Janz et al. fail to teach a core that is resilient, a first mounting member, and openings in the first and second retaining members to receive a surgical tool. Bryan et al. teach an

Art Unit: 4153

apparatus where the core is a resilient core (see supple nuclear portion "24" in figure 3) and a first mounting member (see cannulated screw device "82" which comprises screw "92" and screw anchor "102" in figure 3). Marnay teaches an apparatus where the first retaining member (see plate "110" in figure 1) includes an opening (see holes "115" and "116" in figure 1) into which a portion (see rods "812" and "813" in figures 10 and 11) of a surgical tool extends and the second retaining member (see plate "120" in figure 1) includes an opening (see holes "125" and "126" in figure 1) into which a portion (see rods "822" and "823" in figure 10) of the surgical tool extends. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by Büttner-Janz et al. with a resilient core, as suggested by Bryan et al., as it would enable the apparatus to more accurately mimic the natural movement of the spinal column by allowing compression. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Büttner-Janz et al. and Bryan et al. apparatus with a first mounting member, as suggested by Bryan et al., as doing so would provide a secure means to attach the first retaining member to the first vertebra. It would have been obvious to further modify the Büttner-Janz et al. and Bryan et al. apparatus with openings in the retaining members to engage a surgical tool, as suggested by Marnay, as it would facilitate insertion of the artificial disc into the intervertebral space.

- Claim 1: It flows from the above device that a method for replacing a damaged spinal disc between first and second vertebrae of a spinal column comprises: connecting a first mounting member (see screw anchor "102" in figure 3 of Bryan

et al.) with the first vertebra of the spinal column; and moving an artificial disc between the first and second vertebrae and into engagement with the first mounting member (see screw anchor "102" in figure 3 of Bryan et al.) to guide the artificial disc into position between the first and second vertebrae.

- Claim 30: It flows from the above device that a method as defined in claim 1, specifically the step of moving the artificial disc between the first and second vertebrae, includes connecting a surgical tool (see figures 10 and 11 of Marnay) to a first portion (see holes "115" and "116" in figure 1 of Marnay) of the first retaining member.
- Claim 31: It flows from the above device that a method as defined in claim 30, specifically the step of moving the artificial disc between the first and second vertebrae, includes connecting the surgical tool (see figures 10 and 11 of Marnay) to a second portion (see holes "125" and "126" in figure 1 of Marnay) of the second retaining member.
- Claim 32: It flows from the above device that a method as defined in claim 31, specifically the step of connecting the surgical tool to the first portion of the first retaining member, includes extending a first portion (see rods "812" and "813" in figures 10 and 11 of Marnay) of the surgical tool into a first opening (see holes "115" and "116" in figure 1 of Marnay) in the first portion of the first retaining member.
- Claim 33: It flows from the above device that a method as defined in claim 32, specifically the step of connecting the surgical tool to the second portion of the

second retaining member, includes extending a second portion (see rods "822" and "823" in figure 10 of Mamay) of the surgical tool into a second opening (see holes "125" and "126" in figure 1 of Mamay) in the second portion of the second retaining member.

As indicated above, claims 30-33 are unpatentable over Büttner-Janz et al. (US 5,401,269) in view of Bryan et al. (US 6,156,067) further in view of Mamay (US 5,314,477).

Allowable Subject Matter

Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julianna N. Harvey whose telephone number is 571-270-3815. The examiner can normally be reached on Mon. - Fri., 8:00 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jackson can be reached on 571-272-4697. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4153

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JNH
12/05/07
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Art Unit 4153